

THE AMES

Astrogram

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AMES RESEARCH CENTER, MOFFETT FIELD

October 16, 2000

on-line at: <http://amesnews.arc.nasa.gov>

Ames developing "snakebot" to explore and build in space

Engineers at Ames Research Center are developing an intelligent robot snake that may help explore other worlds and perform construction tasks in space.

The robot serpent, able to independently dig in loose extraterrestrial soil, smart enough to slither into cracks in a planet's surface and capable of planning routes over or around obstacles, could be ready for space travel in five years, NASA engineers predict.

"The snake will provide us with flexibility and robustness in space," said Gary Haith, lead "snakebot" engineer at Ames. "A snakebot could navigate over rough, steep terrain where a wheeled robotic rover would likely get stuck or topple."

"One of our first steps was to make a simple mechanical test snake, and we constructed it in less than a day thanks to previous work at other labs," said Haith. "It is a direct model of a 'polybot' developed by Mark Yim of Xerox Palo Alto Research Center, Palo Alto, CA, with whom we are cooperating. We have slightly different electronics in our version."

"The test snake has a wire that carries communications and power to and from the computer brain," Haith explained. "All of the identical hinge-like modules are easy to make, and we attached the snake segments together in a chain. It has off-the-shelf hobby motors in its hinged segments that cause it to move. Each of the many motors takes a signal from the snake's main computer brain," he said.

"Our first test robot does what we tell it to do, no matter what the results are. If it comes to an obstacle, the robot will continue to try to go over it, even if the task is impossible," he said. "We made the first, simple robot because we wanted a working snakebot in a day or two, a robot that would help us to think about how a snakebot

could and should move."

Robotic serpents can "inchworm" ahead, can flip themselves backward over low obstacles, can coil and can side-wind, Haith said. "Future work will enable the snake to become a mast or a grasping arm. A rover would need to have a dedicated mast and arm that would cost extra weight, money and time."

"A snakebot is not as good at some jobs as other robots, but you get a lot more robot for the weight and the money," he said. "The problem is it's hard to tell the snakebot what to do. It is a complex robot that must operate independently, possibly far from Earth. Work on our



Gary Haith, lead engineer for the Ames program, holding part of the snakebot.



photos by Dominic Hart

The Snakebot in action, moving over rocks on a simulated planetary surface.

second snakebot is aimed at making it capable of independent behavior."

"The key part of what we are striving for in the second snakebot version and beyond is sensor-based control in which the robot uses its sensors to decide what to do," Haith said. "We made two little microcontrollers, tiny computers, that we put in each hinged section that also includes a motor, electronics and gears to get the hinge to move to certain positions," he explained.

The snakebot will have a main com-

puter that will tell its little computers in each segment what to do in a higher, planning sense. The tiny computers in the segments could provide "reflexes" that take care of simple, but important jobs.

"In the next couple of months, we hope to simulate the snakebot in a computer program so we can automatically develop computer routines that can control the robot," Haith said. Engineers have added strain sensors to the robot on metal ribs inside the snake. "They will tell the snake whether or not it is contacting anything, and where and how hard it is touching," Haith explained.

"We hope to write software that allows the snake to learn on its own by experience," he said. "Some lessons we hope it will learn are how to crawl from soft to hard surfaces, and how to go over rough surfaces that have rocks. We even hope to show that it can climb scaffolds and go into cracks. These abilities would help the robot look for fossils or water on another planet," he added.

The snakebot can save spacecraft weight because the snake-like design enables the robot to do many tasks without much extra equipment, according to engineers.

"One of the many advantages of the snake-based design is that the robot is field-repairable. We can include a bunch of identical spare modules with the snake on a space mission, and then we can fix the snakebot much easier than a regular robot that needs specific parts," said Haith. "Other benefits are: the snakebot can crawl off a spacecraft lander and doesn't need a ramp, the snake's moving parts can be sealed inside artificial skin to avoid exposure to the outside environment and the robot can still function, even if one joint freezes."

"In coming years, we hope to make snakebot muscles out of artificial plastic or rubber materials that will bend when electricity is applied to them," he added. "This design change will reduce the snake's weight considerably, and the robot would be very robust, like an automobile tire." For more technical robotic snake information, visit the NASA snakebot Internet site at: <http://ic-www.arc.nasa.gov/ic/snakebot/>

BY JOHN BLUCK

Voluntary Protection Program

Directorate leaders prepare for Voluntary Protection Program kickoff

The Voluntary Protection Program (VPP) planning time for directorate leaders and volunteer representatives from government and contractor organizations across Ames is Tuesday mornings. As the official kickoff of "VPP at Ames" approaches, the VPP team is educating themselves about the OSHA VPP program elements and process, and developing Ames' plans to not only meet, but exceed, OSHA's expectations for STAR sites.

The VPP leaders' visions of how VPP will benefit Ames employees reflect our diverse missions and workplaces.

"Involvement in VPP is key. Employees that have embraced VPP at their work site have found it rewarding to create a safe working environment for everyone. Everyone on site is encouraged to lend a hand to get the VPP ball rolling. Implementation of VPP is a long but worthwhile journey. Stay focused while creating a safer work environment for you

"The primary benefit of VPP is making individuals, contractors and civil servants, more aware of safety in the work environment. It will increase awareness at both the individual and management level, decrease accidents, and maintain our excellent safety



photos by Dominic Hart

Marilyn Morgensen and Joe Hanzel (right) listen as Larry Manning (center) presents his Code S's perspective on VPP requirements to the team.

record," said Paul Grams of the Ames Applied Technology Information Division. VPP

team members who attended a recent national convention in Seattle returned energized by the atmosphere of intense commitment and enthusiastic partnership between unions, management and workers at all levels. Contractors and government employees from Johnson Space Center, which recently achieved VPP STAR certification and is now mentoring Ames, presented their winning ideas in a session on em-

ployee involvement. The conference provided a timely opportunity to talk with others in the process of VPP application as well as some who are continuing the process of safety improvements to maintain STAR certification. Ames participants commented on their experiences:

"The interactive workshops provided guidance and the exchange of information on "STAR" techniques for me to continuously improve our level of safety and health

performance. It was very energizing for me and will be flowed down throughout the Code F directorate," said John Reed, of the Ames Systems Engineering Division.

"I was very impressed by the enthusiasm displayed by the employees of the VPP-certified companies at the conference and look forward to a similar spirit at Ames," said Larry Manning, associate director, of the Ames Astrobiology and Space Research Directorate.

"The National conference in Seattle, Washington was enlightening, informative and most of all fun! I had a chance to meet VPP representatives from all over the country and hear their stories on how their VPP efforts not only created a safer work environment for them but also gave them new ideas on how to enhance the safety of their homes! The information shared was universal--applicable to anyone that had a desire to create a safe and healthy environment. The seminars and workshops were full of new ideas on how safety can be both fun and productive! I look forward to being a part of the team that brings VPP to Ames," said Marilyn Morgensen of the Ames Financial Management Division.

"I was very impressed with the enthusiasm of the people at the conference...I look forward to the next year of preparing for VPP. I think it will be very beneficial and, I hope, —fun," said Ron Black, of the Ames Aerospace Directorate.

"At the recent VPP conference, many of the speakers mentioned that you can't have a successful safety program without employee participation. A quote from one of the speakers was 'Successful safety programs are management led and employee driven.' I believe that this quote says it all," said Dennis Brown, special assistant to the associate director of the Ames Center Operations Directorate.

The Ames VPP team agrees that it will take hard work to meet all of the OSHA criteria for STAR certification. But all employees will enjoy the benefits of safety improvements, smoothly functioning safety processes and more personal involvement in their workplace safety.

Ames technical expertise and achievements are recognized world-wide. Our quality systems are ISO-certified. Now, during 2001, Ames will prepare to meet OSHA's scrutiny and achieve OSHA's highest level of safety recognition.

BY RUTH MARINER



Michael Hulet (left) and Ron Black (second left) prepare to add their comments to the VPP plan. Stan Phillips, team coordinator (center), is attentive to Dennis Brown's (right) recommendations.

and your co-workers," said Rich Toner, of the Wind Tunnel Systems Branch and of the International Federation of Professional and Technical Engineers (IFPTE).

"Code D's goal will be that each Code D employee will take an active part in the safety program at the Center, with the awareness that office workers, no less than shop or laboratory workers, also have a range of safety concerns," said George Sloup of Ames' Chief Counsel's Office.

On-site Events

Ames hosts news briefing about SFO tower simulations

San Francisco International Airport (SFO) and Code IC engineers and scientists participated in a news conference at Ames Sept. 21, to discuss research they recently conducted at FutureFlight Central, a large airport simulator in Bldg. N262.

The simulator can represent the busiest U.S. airport towers in size and capability and can house as many as a dozen air traffic controllers. For SFO, engineers simulated various scenarios for potential control tower relocation, should runway reconfiguration occur.

"If a reconfiguration option is pursued, we want to make certain that the air traffic control tower does not become the limiting factor for the safe, efficient movement of aircraft at SFO," said Matthew Mead, senior planning manager for SFO runway reconfiguration. "This is part of our continuing commitment to deploy the appropriate technology advances to address our rising air passenger levels, decrease delays and decrease noise levels."

During the news conference, Mead answered questions about the status of the SFO simulation work completed at Ames. Nancy Dorighi and Boris Rabin, both of Code IC, answered queries about how the simulator works and conducted a tour fol-

lowing the briefing and question-and-answer period. FutureFlight Central is a walk-in, full-scale, 360-degree airport simulator.

"NASA's FutureFlight Central hopes to save airports costly design errors by permit-



Future Flight Central SFO Simulation Evaluation with Matthew Mead, SFO Airfield Development, left front, and Mark Sherry, ATCT /FAA, right front.



photos by Dominic Hart

Tour of FutureFlight Central Simulator by news media.

lowing planners to easily experience different, highly realistic versions of their airport design and, most importantly, observe how real people work inside these future environments," said Dr. Paul Kutler, deputy director of the Ames Information Systems

Directorate.

The simulator's artificial world changes in real time. Scenes evolve in the same manner that real-world changes occur. In the computer world, airplanes not only come and go, but weather changes. Consoles at each controller's location show radar, weather maps, runway lights and touch-screen controls, as well as other read-outs.

"Engineers can identify future problems and can try solutions in a safe setting, the computer's virtual world," said Dorighi, who manages the facility at Ames. "We are able to represent any airfield in existence or as planned for the future. We can measure the impact of a change on the airport's capacity, and let the controllers try it first-hand, all before anything is built."

Other unique features of NASA FutureFlight Central include: capability to move the tower "eye point" to any location, including a "pilot eye view"; precise controls to simulate weather, time-of-day, cloud coverage and lighting; a voice and data communication network, allowing ground-to-tower and air-to-tower human interaction; and video record and playback, allowing analysis of human performance and decisions. More FutureFlight information is on the Internet at: <http://ffc.arc.nasa.gov>

BY JOHN BLUCK



Halloween Pumpkin Carving and Costume Party

The Ames Exchange is happy to announce the annual halloween pumpkin carving and costume contest party. Festivities will be held at the Ames Café on Tuesday, October 31.

To enter the Pumpkin Carving Contest, drop off your carved pumpkin at the Café by 10 a.m. Voting for the pumpkins will take place throughout the lunch hour. Prizes will be announced at 1:30 p.m.

The costume party begins at 11:30 a.m. Cash prizes will be awarded for best

overall, cutest, scariest, and most original costumes. Judging will begin at 1:00 p.m.

Join us by helping judge the pumpkins or put on your Halloween best and enter to win a prize. Refreshments will be served.

Halloween costume prizes are \$150 for each category and pumpkin carving prizes are \$150 for first place, \$100 for second place and \$75 for third place. We hope to see you there. For more information, contact Jodi Bulaich at ext. 4-4895.

Ames' thermal materials complete successful high-speed flight

Thermal protection materials weren't the only things flying high following a recent flight test of three Ultra-High Temperature Ceramics (UHTCs).

"SHARP-B2 should prove to be a key step in enabling future sharp body aerospace vehicles," said Jeff Bull of Ames' Thermal Protection Materials and Systems Branch (Code AS). Bull is chief engineer for the project. The Slender Hypervelocity Aerothermodynamic Research Probes (SHARP) program develops and tests new thermal protection materials and sharp body concepts.

"The launch went superbly," seconded a clearly exuberant Joan Salute, Ames'

Mike Green, chief of Ames' Space Transportation Projects Office (Code AX), witnessed the launch with about 20 colleagues. He shared the enthusiasm, reporting that "both Paul Kolodziej and I had the identical feeling after the SHARP-B2 launch: We had just experienced something very important for the future of aerospace." Kolodziej was chief engineer on the first SHARP launch in 1997.

"We believe these materials may lead to a radical new concept in aerospace vehicle design and performance — the use of sharp leading edges on hypersonic vehicles," said Salute. "The potential increase in spacecraft maneuverability is like going from a semi-trailer to a Ferrari." She said the material showed exceptional performance during its first flight test in 1997 and during tests in Ames' arcjet facilities.

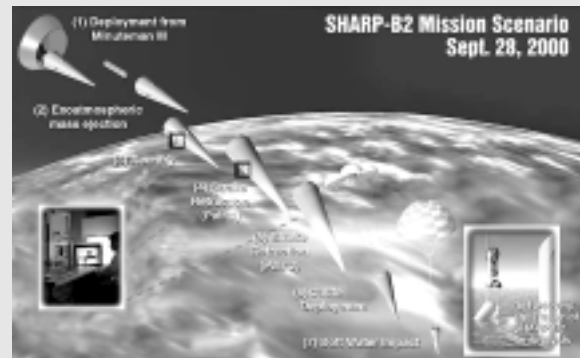
Sharp leading edges offer several advantages over the blunt-body design currently in use. They could allow a space shuttle or crew return vehicle to maneuver in space more like an airplane and potentially allow astronauts to return to Earth from anywhere on orbit. They also might reduce or eliminate the electromagnetic interference that causes the communications blackouts that plague reentering blunt-body space vehicles. Reducing the amount of drag could lead to a reduction in propulsion requirements. In addition, planetary probes could make use of sharp-body technology for aerobraking and to maximize their maneuvering capability.

"Our goal is ultimately to transfer this technology to the aerospace industry for use in next-generation reentry vehicles," said Bull. "Based on input from the industry, this test incorporated a more realistic representation of a leading edge that may be used on a reusable launch vehicle."

In addition to Codes ASM and AX, the Space Technology Division (Code AS) and the Space Projects Division (Code SF) contributed to the success of the most recent flight.

"SHARP-B2 is one of the most significant accomplishments by Code A at Ames this year," said Grant Palmer, Eloquent employee in the Reacting Flow Environments Branch (Code ASA) who performed the aerodynamic analysis on B2. "It showed that an Ames team can manage and execute a project that meets its objectives on time and on budget. All current and future space projects should look at the way the SHARP-B2 team did things and learn from it."

The Ames payload was launched aboard a U.S. Air Force Minuteman III missile carry-



Schematic of the seven-step SHARP-B2 mission scenario that was successfully conducted on Sept. 28, 2000.

ing an Mk 12A reentry vehicle (RV), which blasted off from Vandenberg Air Force Base near Lompoc, CA, at 3:01 a.m. PDT on Sept. 28. The RV was equipped with four 5.1-inch-long strakes, or sharp leading edges. Each contained three UHTCs, materials designed to prevent spacecraft from burning up during reentry into Earth's atmosphere.

Once it reached an altitude of about 400 nautical miles, the RV was released, returning through Earth's atmosphere at blistering speed. A parachute was deployed and the RV landed in a lagoon at the Kwajalein missile range in the Pacific Ocean. Sensors in the strakes measured how closely performance matched pre-flight calculations, and at what temperature the materials began to melt.

One pair of strakes was retracted just before reaching temperatures high enough to cause the material to begin ablating or burning off. The other pair was retracted shortly after ablation began, at a temperature of nearly 5,100 degrees Fahrenheit. NASA engineers collected data throughout the 23-minute flight, up to the moment of splashdown. Animation of the entry and recovery of the RV is available at: <http://amesnews.arc.nasa.gov>

"Sharp leading edge technology is one of several technologies NASA is developing to help achieve its aerospace goals," said Michael Phipps, project manager of the Pathfinder Experiments Project at Marshall Space Flight Center, Huntsville, AL. Phipps cited several areas that may benefit from this new technology, including increased safety and reliability of aerospace vehicles. The technology also may contribute to reducing the cost of putting payloads into space, from thousands of dollars per pound to a few hundred dollars per pound in the long term, making access to space more affordable to a variety of markets.

SHARP is a joint effort among NASA, Sandia National Laboratories and the U.S. Air Force. It is funded by the Pathfinder Program at Marshall.

BY ANN HUTCHISON



SHARP-B2 reentry vehicle before flight, with two of the four UHTC strakes visible.

SHARP-B2 project manager and associate director of aeronautics, a few hours after the flight.

While in the launch control room, Salute was able to confirm that the various stages of the flight took place as planned. "Within 3 hours we were able to verify that the radar track analysis showed ocean entry to be precisely at the latitude/longitude coordinates estimated during pre-flight simulation," she said. An hour later, a ship was deployed by the Air Force to recover the reentry vehicle, from 170 feet of water, just a few hundred yards from its planned splashdown point. Post-flight analysis is underway.

Last month's flight tested thermal protection materials that may radically change the design and performance of future aerospace vehicles. They also may overturn an age-old tenet of aerodynamics: that blunt-body aerospace vehicles, but not those with sharp leading edges, can survive the searing temperatures created as the vehicles tear through the atmosphere.

CFC Campaign Kickoff

Goodwill Industries International 1997 Graduate of the Year to speak at Ames

On Wednesday, October 18, Ray Siawleski, the Goodwill Industries International 1997 Graduate of the Year will speak in the Ames' Auditorium, to help celebrate the Combined Federal Campaign kickoff for 2000. In January 1986, Ray was severely injured when an automobile crashed into the motorcycle that he was driving. At 25, he was told that his spinal cord had been severed at the sixth vertebrae and that he would never work or live on his own again! Ray was a stubborn man. He endured six months of hospitalization in the spinal cord unit at Valley Medical Center, re-learning how to use his muscles. Then he had nine months of training, during which he learned how to live independently as a quadriplegic. Two years later, he received a service assistant golden retriever, who he named Jessop. It took two more years to receive a customized van that this courageous young man could drive.

In 1993, he went to Goodwill Industries of Santa Clara County and talked to their counselors. Ray's case challenged them when he told them that he had not worked in over eight years. But they soon discovered his talent for mathematics and started him on an accounting training

program. He also took job preparation courses and, like all good students, prac-



Ray Siawleski, a Goodwill Job Training Graduate and upcoming guest speaker at Ames' Combined Federal Campaign Kickoff meeting on Oct 18, is shown here being honored by President Clinton.

ticed interviewing. In the fall, he graduated from Goodwill's program and started as a receptionist with the Internal Revenue Service. By the late 1990s he had progressed to maintaining the Criminal Investigation Management Information System,



an IRS computer database that serves as an information hub. This year he was promoted to working in their bankruptcy division.

Ray has gone from needing full-time attendant care to less than three hours a day. He has gone from living on disability payments to earning a good salary. And, he has learned to cook, clean, get around in his wheelchair and drive a van. He has met with and been praised by Senators Dianne Feinstein and Barbara Boxer and been recognized by President Bill Clinton as an outstanding role model.

Goodwill is one of the many choices that Government employees have when they donate to the Combined Federal Campaign. We encourage you to attend the kickoff event on October 18 and hear this success story for yourself. The more you learn about the Combined Federal Campaign, (CFC), the more you will be committed to supporting it.

The Power of One, You Can Make a Difference!

Combined federal campaign flourishes in the fall

This year, the NASA Ames Research Center's Combined Federal Campaign commences on October 18 and continues through November.

Since President John F. Kennedy's tenure in 1961, government employees no longer have to listen to various pleas for donations. We now have a once-a-year concentrated effort that provides many choices which are well scrutinized by the government.

Herb Finger, Chief, Wind Tunnel Sys-

tems Branch, serves as our Ames liaison to the Santa Clara and San Benito counties CFC office. This year's chairperson is Grace Ann Weiler of Code JA who will be assisted by Jean Nozaki. Many staff members will be busy helping them as directorate coordinators, division captains and key workers. When they come to your office, please welcome their visit. Remember, you have "The Power of One, You Can Make a Difference."



Safety & Quality

Safety and Quality Week 2000 in full swing

The chili's hot and so is the schedule of Health, Safety and Environmental training opportunities that await Ames personnel during Safety and Quality Week 2000. Events are designed to provide hands-on training and safety-related information as well as top-notch speakers throughout the week.

The week's headline events include the Quality Forum on Tuesday and Wednesday; Fall Fun Run; the Center-wide Voluntary Protection Program (VPP) roll-out sessions and the ever-so-famous Stand Down Training Day and Street Fair, which features a variety of good old fashioned steaming hot chili. So, come one, come all for a healthy dose of quality and safety at this year's

annual Code Q and Center event.

The list of events promises to entertain with former astronaut Mike Mullane on Monday at 9:00 a.m. and Mt. Everest expedition speaker, Robert Hoffman at 2:00 p.m. in the Building 201 Auditorium. These two dynamic and interesting speakers are followed on Friday at 9:00 a.m. by Captain Lawrence Brudnicki, who was portrayed in the movie, "The Perfect Storm". Captain Brudnicki promises to provide his audience with a memorable program in his discussion of, "Operational Risk Management."

This is one presentation you won't want to miss.

Center Management encourages you to



take time out from your routine duties, kick back and enjoy the many Center events on Safety Stand Down Day while getting some solid training under your belt. Get ready for some pipin' hot chili and enjoy the week Code Q has in store for you.

Safety and Quality Week Schedule of Events October 16-20

Monday

- Safety and Quality Week Kickoff - N201 Auditorium 9:00 a.m. - 11:00 a.m.
Featured Speaker - Astronaut Mike Mullane
- Presentation by Robert Hoffman, Mt. Everest Expedition Leader 2:00 p.m. - 3:30 p.m.
"Everest Environmental Expedition 2000 - Mission Success With Extreme Risk"- N201 Auditorium
- Safety, Health and Environmental Training Classes All Day
<http://q.arc.nasa.gov>

Tuesday

- Quality Forum 2000 8:30 a.m. - 5:00 p.m.
Moffett Training and Conference Center, Building 3
<http://qualityforum.arc.nasa.gov>
- Fun Run - Starts on DeFrance Ave /Warner Road Awards 12:00 p.m. - 1:00 p.m.
- Safety, Health and Environmental Training Classes All Day

Wednesday

- Quality Forum 2000 8:30 a.m.- 5:00 p.m.
- Safety, Health and Environmental Training Classes All Day

Thursday - Safety Stand Down Day

- Safety and Quality Street Fair - Durand Road 11:00 a.m. - 2:00 p.m.
- Chili Cookoff- Durand Road 11:30 a.m. - 12:30 p.m.
- Chili Cookoff Awards Presentation 12:45 p.m.
- VPP Training Classes All Day
<http://q.arc.nasa.gov>

Friday

- Presentation by Capt. Lawrence Brudnicki: "Operational Risk Management" Rescue efforts depicted in the movie "The Perfect Storm" - N-210 Auditorium 9:00 a.m. - 10:30 p.m.

“Perfect Storm” rescuer to speak during Safety Week

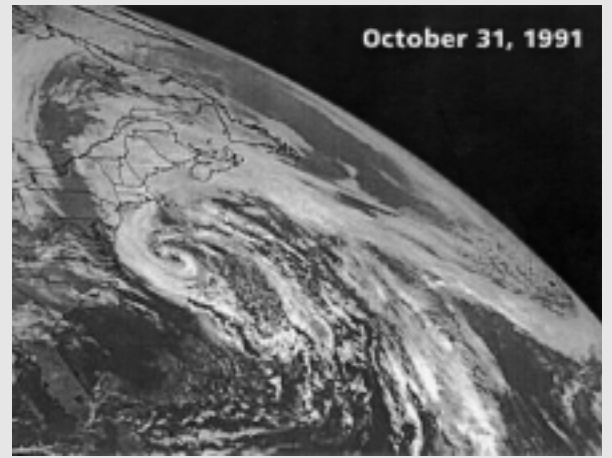
Captain Lawrence G. Brudnicki of the U.S. Coast Guard will speak at Ames on October 20 on his crew’s heroic rescue operation carried out during the famous Andrea Gail tragedy, portrayed in the movie “The Perfect Storm.” There were two rescues by the Coast Guard aboard a 205-foot long, 1,600-ton medium-endurance cutter during the historic storm off the coast of Cape Cod, Mass, on October 31, 1991.

The Satori, a 32-foot sailboat, was the first successful rescue, with one man and two women on board. After the rescue, the Coast Guard team were returning home when they received a call that a rescue helicopter had called in a “May Day” and was going down in the midst of the storm in the Atlantic Ocean. Captain Brudnicki’s crew responded.

To hear how this fascinating true story ends, come to main Ames auditorium on Friday, October 20 at 9:00 a.m. You won’t be disappointed.



Captain Brudnicki addresses the audience at an earlier speaking engagement.



Satellite imagery of weather patterns over the rescue area shows evidence of a major storm.

NASA Y2K Management Team receive achievement award



photo by Tom Trower

Ray O'Brien (second from right), Cynthia Carbon and George Sabolish (left) recently received a NASA Honor Group Achievement Award, presented by Center Director Henry McDonald in recognition of the successful completion of their project management role with the NASA Y2K management team.



OPEN HOUSE

Thursday, October 26, 2000

11:00 a.m. to 1:00 p.m.

Tour in building 220

Come One, Come All

Ames’ Machining and Instrumentation centers invite you to visit their facilities so they can show you their stuff.

There will be:

- demonstrations highlighting unique skills
- product displays representative of capabilities
 - sample products
 - and
- answers to your questions.

Awards & Recognition

Ames hosts Honor Awards

The honorees received their awards on Wednesday, October 4 in the Main Auditorium (N-201).

Thanks to every employee who submitted a nomination this year, and congratulations to these deserving employees.

Administrative

Mary E. Bravo
Barbara L. McCalment

Mentor

Wardell Lovett
Julie A. Pollitt



Peter Jenniskens (center) of the Astrobiology Leonid Mission Project group which received one of the Group/Team honor awards, speaks with Jack Boyd, Executive Assistant to the Center Director after the awards ceremony.

Contractor Employee

Lisa A. Baer
David W. Bogdanoff
Peter J. Gage
Judy L. Hover
Fred M. Jones
Mathias Ma
Lynette I. Raburn
Lisa Thorell

Supervisor/Manager

Bonnie P. Dalton
Rosalind A. Grymes
Harry N. Swenson

Student

My H. Trang



photos by Dominic Hart

Michael Meyer of NASA Headquarters see chatting after receiving the Headquarters Employee Honor Award at the Honor Awards ceremony.

Headquarters Employee

Michael A. Meyer

Technical Support

John G. Bluck

Equal Employment Opportunity

Sheila A. Johnson

Technician

Terry C. Bland



Lynette Raburn, recipient of the contractor employee award, talks with Sheila Keegan (left) during the reception after the awards ceremony.

Group/Team

Astrobiology Leonid Mission Project Team
Pseudo Aircraft System (PAS) Software Development Team
NASA Astrobiology Institute (NAI) Central Team
Distributed Air/Ground-Traffic Management Planning Team
NASA FutureFlight Central (FFC) Team
LOFT Debriefing Team

Safety and Environment

Gail E. Miyahara

Engineer

Robert E. Holmes
Larry A. Young

Secretary/Clerical

Della J. Ivey
Eileen H. McGough
Kim A. Washington

Technology Development

Michael R. Haas

Foothill De Anza Internship program to celebrate thirty-year partnership with Ames on November 2

The Foothill-De Anza Community College District internship program staff invite all employees at Ames to attend their 30-year anniversary event to be held on November 2, in Hangar 1. The event is to celebrate the anniversary and to thank Ames for providing leadership, counsel and dedication to students throughout

these past 30 years.

Over the years, the program has assisted nearly 3,000 students in pursuing their career and academic goals. The evening will begin at 5:00 p.m. with a reception; dinner at 6 p.m. will be followed by a formal program. The cost of the tickets is \$35 per person.

Anyone interested in attending the anniversary event may contact the Foothill-De Anza internship program office at ext. 4-5560 or send an email to: nbilderback@mail.arc.nasa.gov.

Reservations must be received no later than October 19.

Calendar & Classifieds

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett Field invites train buffs to visit & join the club in Bldg. 126, across from the south end of Hangar One. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Ballroom Dance Club, Tuesdays: Nightclub 2-step 10/3, 10/10, 10/17, Waltz 10/24, 10/31, 11/7, Hustle 11/14, 11/21, 11/28. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Classes in Building 944, the Recreation Center. Women dancers are especially encouraged to join. POC: Helen Hwang, hawang@dm1.arc.nasa.gov.

Ames Bowling League, Tuesdays, at 6 pm at Palo Alto Bowl. Bowlers needed. POC: Mina Cappuccio at ext. 4-1313 or Carmen Park at ext. 4-1215.

Ames Child Care Center Board of Directors Mtg., Every other Thursday (check website for meeting dates: <http://accrc.arc.nasa.gov>), 12:00 noon to 2:00 PM, N269, rm. 201. POC: Katharine Lee, ext 4-5051.

Safety and Quality Week scheduled for Oct. 16 thru 20. Safety Stand Down day on Thurs, Oct 19. Quality Forum on Tues, Oct 17 & Weds, Oct 18 (Bldg3). Voluntary Protection Program roll out on Oct 19 (Auditorium, N-201 and Bldg 3). Chili Cook-off, Health & Safety Awareness vendors. Speakers, Astronaut Mike Mullane, Oct 16 at 9 a.m. and speaker Captain Lawrence Brudnicki, whose perils the movie "Quiet Storm" was based on will speak on Oct 20 at 9 a.m. in Bldg. 3. POC: Chaz Czaplicki@mail.arc.nasa.gov, ext. 4-6942.

NFFE Local 997 Union General Mtg., Oct 18, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Multicultural Leadership Council Mtg., Oct 18, 11:30 a.m. to 1 p.m., Galileo Rm/Ames Café. POC: Sheila Johnson, ext. 4-5054 or David Morse, ext. 4-4724.

Ames Asian American Pacific Islander Advisory Group Mtg., Oct 19, 11:30 a.m. to 1 p.m., N-237/Rm. 101. POC: Daryl Wong, ext. 4-6889 or Margaret Salas, ext. 4-6755.

Ames Amateur Radio Club, Oct 19, 12 noon, T28-N (across from N-255). POC: Michael Wright, KG6BKF, at ext. 4-6262. URL: <http://hamradio.arc.nasa.gov>

Native American Advisory Committee Mtg., Oct 24, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Mtg., Nov 1, 11 a.m., N-200 Comm. Rm. POC: David Lawrence at ext. 4-6434.

Environmental, Health and Safety Monthly Information Forum, Nov 2, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1078. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, Nov 2, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Ames African American Advisory Group Mtg., Nov 2, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

Nat'l Association of Retired Federal Employees, (NARFE), San Jose Chapter #50, Mtg., Nov 3, at Hometown Buffett, Westgate Mall, 4735 Hamilton Av, San Jose. Prog. & bus. mtg. at 9 a.m., followed by lunch, \$6.27, in a reserved area. Program starts at 9:30 a.m. followed by lunch. POC: Mr. Rod Perry (650) 967-9418 or NARFE 1-800-627-3394.

Professional Administrative Council (PAC) Mtg., Nov 9, 10:30-11:30 a.m., Bldg T27A, Rm. 115. POC: Leslie Jacob, ext. 4-5059.

Ames Sailing Club Mtg., Nov 9, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Stan Phillips, ext. 4-3530.

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

Custom 3,000 sq ft, 4-bedroom, 4.5-bathroom house on Pinnacle Loop in Tahoe Donner near Truckee features king-size beds, fully equipped kitchen, spacious great room, and spectacular panoramic views. Call (559) 299-0450 or e-mail nvalday@aol.com for more info.

Sunny, pleasant room for rent in the Los Gatos/Campbell corner of San Jose for considerate professional/non-smoker. Tastefully furnished, utilities included. Long term preferred, shorter term possible over 3 months. Lease/deposits required. Shared bath. Call (408)266-7272 and lv. message.

Non-smoking female roommate wanted to share 2bd/2ba 1000 sq feet, Mountain View apartment. \$800/mo plus utilities. No pets. Convenient to rail station (10 min walk to Castro St/Ames shuttle), bus lines, and expressways. Across street from shopping. Kimberly Ennico (650) 625-1265 (eves).

Visiting Yale Professor at Stanford Univ. seeks Palo Alto/Mtn View area short-term rental, house-sit or home trade (w/ rural New Haven home) opportunity for period 11/6/00 thru 1/7/01. Dates flexible/negotiable. Desire to bring well-behaved & quiet golden retriever, but can arrange other hsg for dog if this presents a problem. Contact Stefan & Julaine Rosner (650) 320-0074, email: Stefan_Rosner@yahoo.com

Transportation

'66 Mustang, 289 with A/C. In the rebuilding stage and will be sold "As Is". Rebuild kit included with car. Asking \$2,000 or B/O. Dave (408) 238-5196.

'86 Olds Custom Cruiser 9 pass. sta. wag. - also serves as urban P/U truck with plenty room for 4x6 stacks of plywood, etc. (doors closed), or bulky cargo. Great A/C, power accessories, and good rubber. 158K mls- starts and runs well. \$2,500. Call (925) 933-8706.

'99 Acura 3.2TL, luxury sedan, 36K mls, 3.2 V6, Sun/moon roof, climate control, Bose sound, sport shift ATM, factory Acura navigation system. Red exterior. Black leather interior. Loaded and in excellent condition. Only selling since relocating overseas. Asking \$24,900, or B/O. Call (408) 358-6907.

Miscellaneous

Futon for sale. Less than 1 year old. Pine frame w/ cushion and zippered slipcover. \$250 or B/O. David (650) 988-1261.

Mac LCIII with 13" apple color monitor, keyboard, mouse, misc. games and other software. \$100. Keith, Call (408) 225-7294.

Oak quilt hanger, \$30. Dark pine, early American-style Ethan Allen oval coffee table and 2 end tables with storage (tops need refinishing), \$30 ea; small B&W TV, \$15; 2 large framed floral prints, \$25 ea. Beseler 67c enlarger, \$150. Dark pine wall sconces for candles, w/ glass globes, \$18/set. Black London Fog suit bag, \$45. Call (408) 248-1985 after 5 p.m. or weekends.

Six boxes of books on multimedia development and programming are available for donation to a college, university or other appropriate agency that can accept donations. Bulk of texts are two to three years old. Request donation receipt/acknowledgement for donation. Call (510) 536-1316 or email: skeith@best.com

Standard bathtub shower enclosure w/ rails- top, bottom, and sides. Aluminum finish w/frosted glass doors. Mounting screws. \$25.00 510-471-9384

Vacation rental

Lake Tahoe-Squaw Valley Townhse, 3bd/2ba, balcony view, horseback riding, hiking, biking, golf, river rafting, tennis, ice skating, and more. Summer rates. Call (650) 968-4155 or email DBMcKellar@aol.com

Carpool

Carpool wanted from Livermore to Ames. Beginning Oct 11. 3-4 times per week, 5:30 a.m. to 4:30 p.m., negotiable. Crystal at ext. 4-6704.

Do you live in San Jose and take H280N and H85 to work? I have my own car, but would like to take advantage of the carpool lane. I have an 8 a.m. -5 p.m. (Mon-Fri) schedule. Call Angela at 4-5948 or aslau@mail.arc.nasa.gov.

Lost & Found

Moffett Field Lost and Found may be reached at ext. 4-5416 at any time. Residents and employees at Ames may also use Internet browser at: <http://ccf.arc.nasa.gov/codejp/pages/lostFound.html> to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field security police investigations section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Ames public radio

1700 KHz AM radio -- information announcements and emergency instructions, when appropriate, for Ames employees.

Holiday catering by Ames Café

It's that time of year again. The mornings are getting cooler, the leaves are changing color and the holiday party season is just around the corner.

Make your party a success by having the Ames Café cater your event. The Ames Café can provide you with all the holiday goodies. From casual to elegant, you can customize your event menu to your specific needs.

To order for your special event catering, call Karen McIntyre at ext. 4-2161.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

Deadline	Publication
Fri, Oct 20	Mon, Oct 30
Fri, Nov 3	Mon, Nov 13
Fri, Nov 17	Mon, Nov 27
Fri, Dec 1	Mon, Dec 11
Fri, Jan 5	Mon, Jan 15

NASA Ames activates new Public Affairs web site "ames news"

An upgraded NASA public affairs web site, <http://amesnews.arc.nasa.gov>, was brought alive this week at Ames.

The "amesnews" site includes press releases, images for publication, the Ames employee newspaper, the "Astrogram," as well as much other information.

"We will be able to handle a greater number of users at the same time," said the web's author, Jonas Diño, of the Center's Office of Communication (Code DXC). "We not only moved the site to a faster server computer, but we upgraded the site to provide better access for handicapped users."

"The web site was recently moved to a more powerful and secure environment as part of a major upgrade in local service improvements," according to Therese Holliday, of the Ames web services group. "With the recent redesign of the site, users will be able to more easily navigate the site and find needed information more quickly."

The old Internet addresses for the Ames public affairs website, <http://ccf.arc.nasa.gov/dx> and <http://george.arc.nasa.gov/dx>, will continue to work for a limited time, but users who

"bookmark" the new "URL" will usually get a significantly faster response when they click to access the new site.

The Astrogram newsletter, though intended for employees, often contains newsworthy information of interest to a wider audience, including the general public as well as journalists. On-line issues of the Astrogram, beginning with the Jan. 1, 2000 newspaper, are now provided in portable document format (PDF). The PDF Astrogram looks exactly like the printed version of the newspaper that you are presently reading.

In addition, the website includes a section describing the NASA Ames Educators' Resource Center that has materials for educators, including lesson plans, publications and audiovisual instructional materials.

NASA Ames news releases are also available at the time of issue by e-mail.

To receive Ames releases via e-mail, send an e-mail with the word "subscribe" in the subject line to: ames-releases-request@lists.arc.nasa.gov. To unsubscribe, send an email to: ames-releases-request@lists.arc.nasa.gov with "unsubscribe" in the subject line.

BY JOHN BLUCK

Astronaut Jernigan visits Ames



photo by Eric James

Astronaut Tamara Jernigan spoke at the Director's Colloquium on September 14 on the subject "Space Shuttle Mission Highlights and a Visit to the International Space Station." She presented a series of slides that summarized the major activities on Space Shuttle missions STS-40, 52, 67, 80 and 96. She then narrated a 15-minute video taken during STS-96 mission, the first docking mission to the International Space Station.



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